

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 805 WO PA-RIX	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2004/010885	International filing date (<i>day/month/year</i>) 29.09.2004	Priority date (<i>day/month/year</i>) 21.10.2003	
International Patent Classification (IPC) or national classification and IPC F16H57/04, F16H3/54			
Applicant ZF FRIEDRICHSHAFEN AG			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/010885

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-8 _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. 1-8 _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* _____ received by this Authority on _____
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets 1/1 _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Box No. V	International application No. PCT/EP2004/010885
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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)	Claims 1–8	YES
	Claims _____	NO
Inventive step (IS)	Claims 1–8	YES
	Claims _____	NO
Industrial applicability (IA)	Claims 1–8	YES
	Claims _____	NO

2. Citations and explanations (Rule 70.7)

1. The present report makes reference to the following documents:

D1: DE 199 17 673 A (ZAHNRADFABRIK
FRIEDRICHSHAFEN) (2000-10-26)
D2: US 2 896 479 A (KELBEL DONALD W)
28 July 1959 (1959-07-28)
D3: US 4 573 373 A (SHIMIZU YASUO ET AL)
4 March 1986 (1986-03-04)
D4: US 4 489 626 A (LEMON ROBERT W)
25 December 1984 (1984-12-25).

2. Document D1 is considered to be the closest prior art. Said document discloses, as per the preamble of claim 1 (the references in brackets are to said document):

a spindle gear (1), comprising a drive shaft (2), a output shaft (3) and a two-step planetary gear system between the drive shaft and the output shaft in the direction of power flow. The planetary gear system includes a sun gear connected to the drive shaft (4), a ring gear (5)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/010885**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

seated in a ring gear bearing (6), and a planet carrier (7) with planets (8) forming the output of the planet gear system, from which the subject matter of independent claim 1 differs in that:

the gear system is provided with an oil inlet, which is connected to an oil pump located outside the gear system, and the output shaft bearing and the ring gear bearing can be lubricated by the circulation of oil.

- 2.1 The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem addressed by the present invention can consequently be regarded as that of reducing the loss of oil between the bearings.

- 2.2 The solution to the above problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)) since the prior art does not disclose a piston ring located between the two output shaft bearings and provided with an oil duct.
- 2.3 Claims 2-8 are dependent on claim 1 and, in consequence, likewise satisfy the requirements of the PCT in respect of novelty and inventive step.